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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,444	11/13/2003	Dan W. Youngner	H0005690US (HON0003/US)	8710
7590 08/17/2006			EXAMINER	
Matthew Luxton Honeywell International Inc. Law Dept. AB2 101 Columbia Rd. Morristown, NJ 07962			TUROCY, DAVID P	
			ART UNIT	PAPER NUMBER
			1762	
DATE MAILED: 08/17/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/712,444

Applicant(s)

YOUNGNER ET AL.

Examiner

David Turocy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☒ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13, 21-27 and 29-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-27 and 29-33 is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-13 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/5/2006 has been entered.

### ***Response to Amendment***

2. The applicant's amendments, filed 6/5/2006, have been fully considered and reviewed by the examiner. The examiner notes the amendments to claims 1, 8, 11, 12, and 13, the cancellation of claims 6 and 28. In light of the cancellation of claim 28, the objection to such has been withdrawn. The examiner notes the amendment to the specification. Claims 1-5, 7-13, 21-27, and 29-31 remain pending in the instant application.

### ***Claim Rejections - 35 USC § 112***

3. Claims 8, 11, and 12 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed,

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had possession of the claimed invention. The examiner can not locate support in the specification for the "about" term to be included in the range. The examiner has completed a cursory search of the disclosure and can not locate support. If the applicant can provide support the examiner will withdrawn the rejection.

### ***Response to Arguments***

4. Arguments by the applicant are directed to newly amended limitations that were not present at the time of the previous rejection and therefore are considered moot and will be addressed in the subsequent rejections below.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5 and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shieh in view of US Patent 6013538 by Burrows et al., hereafter Burrows and further in view of US Patent Publication 2004/0061136 by Tyan et al, US Patent Publication 2004/0038075 by Wang et al., and US Patent 6372154 by Li.

Shieh teaches of a method for enclosing a reactive material by a covering material by providing a substrate with a fixed shadow mask within a vacuum chamber having the source materials therein (Figures, Column 4, lines 35-57, Column 1, lines 32-41). Shieh discloses providing a vacuum in the chamber and evaporating the reactive material and covering such that they pass through the shadow mask and deposits a covering material with a larger surface area to completely cover the reactive material (Figures, Column 2, lines 35-39, Column 4, lines 35-57). Shieh discloses rotating the substrate on an axis perpendicular to the surface covering during evaporation and a covering material that is located at an oblique angle to the axis (Column 6, lines 30-32, Column 2, lines 34-39, Column 6, lines 37-54).

Shieh additionally discloses forming a OLED, but fails to disclose a specific reactive material.

However, Burrows, teaching of a method for covering a reactive material in the similar fashion to form a similar OLED as taught by Shieh, discloses depositing a cathode comprising lithium (Column 6, lines 3-4). Burrows discloses providing a component comprising lithium with a thickness of 0.5 to 5 microns followed by a subsequent covering material with a thickness of 0.5 to 5 microns (Column 6, lines 10-11, 39-40). Since the component disclosed by Burrows comprises lithium it must necessarily be reactive as evidenced by applicants claim 6.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shieh to use the deposition materials and thicknesses as suggested by Burrows to provide a desirable organic LED because Burrows discloses

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providing a composition comprising lithium is known in the art to provide an layer for a organic LED and therefore one would reasonably expect the material to be effective in the OLED as taught by Shieh.

Additionally, Tyan, Wang, and Li, all teaching of known and suitable cathode materials for a OLED. Tyan discloses known and suitable cathode materials for OLEDs comprise gallium (paragprah 0124), Wang discloses known and suitable cathode materials for OLEDs comprise lithium, sodium, potassium, cesium, rubidium, among others (0086), and Li discloses known and suitable cathode materials for OLEDs comprise lithium and sodium. Since the materials taught by the references for a cathode comprise rubidium, cesium, gallium, potassium, and/or sodium, the material must necessarily be reactive as evidenced by applicants claim. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have deposited the cathode materials as suggested by Tyan, Wang and Li in the method of Shieh in view of Burrows with a reasonable expectation of success because Tyan, Wang, and Li disclose well-known and suitable cathode materials for OLEDs and one would reasonably expect the materials to be effective in the OLED as taught by Shieh and Burrows.

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Claims 2 and 12: Shieh in view of Burrows and further in view of Tyan, Wang, and Li does not explicitly disclose a covering material is from 0.1 to 10 percent greater than the area of coverage or the angle of incidence is in the range from 1 to 10 degrees.

However, Shieh discloses having a slight angle of incidence from the perpendicular to insure complete coverage of the reactive material (Column 6, lines 51-54). Therefore Shieh discloses the area of coverage and the angle of incidence are result effective variable, where too small a coverage (too small an angle) would result in incomplete coverage of the reactive material and too much coverage (too large an angle) would result in no added benefit of more complete coverage.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the angle of incidence and coverage area used in the process of Shieh in view of Burrows and further in view of Tyan, Wang, and Li, through routine experimentation, to completely cover the reactive material with the desired properties associated with complete coverage of the reactive material.

Claim 5: Shieh discloses providing a distance H between the shadow mask and portion to be coated, but does not explicitly disclose a desired distance. Therefore, one of ordinary skill in the art would be motivated to optimize the distance to provide an appropriate distance for depositing both the reactive material and covering material in the desired shaped.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the distance between the mask and substrate used in the process of Shieh in view of Burrows and further in view of Tyan, Wang, and Li, through routine experimentation, to provide a effective distance to deposit the reactive and covering material to the desired portions of the substrate.

Claim 8-9: In the case where the claimed ranges "overlap or lie" inside ranges disclosed by prior art a *prima facie* case of obviousness exists. *In re Wertheim*, 541 F.2d 257 191 USPQ 90. See MPEP 2144.05.

Claim 11: Shieh discloses rotating the substrate but fails to disclose the speed of rotation. However, It is the examiners position that the process parameters of speed of rotation is a known result effective variable. If speed is too low it would result in too large a coating thickness and too high a speed would result in a coating thickness that is too thin.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the speed of rotation of the substrate used in the process of Shieh in view of Burrows and further in view of Tyan, Wang, and Li, through routine experimentation, to impart the substrate with the desired properties associated with the coating.



***Allowable Subject Matter***

7. Claims 21-27 and 29-33 are allowed.
8. Claims 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. The following is a statement of reasons for the indication of allowable subject matter:

Claim 21: None of the prior art cited or reviewed by the examiner alone or in combination teaches or reasonably suggests forming a microelectronic mechanical device using the process steps as claimed.

Claims 7 and 27: The closest art cited or reviewed by the examiner is Youngner et al, US Patent 6900702, discloses covering the rubidium with aluminum (Column 3), however, none of the prior art cited or reviewed by the examiner discloses providing a reactive material comprising gallium or rubidium and then subsequently enclosing the reactive material with tungsten or aluminum respectively by using evaporation and a shadow mask for deposition of both materials.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Turocy  
AU 17620

A handwritten signature in black ink, appearing to read 'Timothy Meeks', with a large, stylized 'T' and 'M'.

**TIMOTHY MEEKS**  
**SUPERVISORY PATENT EXAMINER**